Design
Builder: Tacoma Boatbuilding Company, Tacoma, WA
Keel Laid: April 14, 1983
Delivered to MSC: November 9, 1984
Transferred to USCG: 1998
Transferred to NOAA: October 30, 2001
Commissioned: September 3, 2004
Hull Number: R334
Call Letters: WTEY
Home Port: Honolulu, Hawai‘i

Length (LOA): 68.3 m (224 ft)
Breadth (moulded): 13.1 m (43 ft)
Draft, Maximum: 5.1 m (16.6 ft)
Displacement: 2,285 tons
Gross Tonnage: 1,914 tons
Net Tonnage: 574 tons

Speed & Endurance
Cruising Speed: 10.5 knots
Range: 8,000 nm
Endurance: 50 days
Endurance Constraint: Food

Complement
Commissioned officers: 6
USPHS Medical officer: 1
Licensed engineers: 3
Crew: 17
Scientists: 22 (max)

Food Service Seating Capacity
Forward mess room: 8
After mess room: 20

Berthing
Single staterooms: 12
Double staterooms: 14
Quadruple staterooms: 2
Total bunks: 48

Medical Facilities
Medical treatment room with one bunk containing life-saving emergency and first-aid equipment, administered by a USPHS officer.
Three person, double-lock dive decompression chamber maintained and supervised by a chamber operator and a Dive Medical Technician (DMT)

Scientific Spaces
Dry lab: 443 sq ft
Wet lab: 203 sq ft
Survey lab: 104 sq ft

Hyperbaric Chamber
Location: 02 deck
Type: Double lock 46 in
Nitrox Capabilities (Nuvair System)
Low pressure air compressor
High pressure air compressor

Deck Equipment

Crane
Articulating Crane
Quantity: 1
Manufacturer: Hydra Pro
Boom length (extended): 46 ft
Location: stern - stbd side
Lifting capacity (boom extended): 6,600 lbs

Winch
Oceanographic Winch
Quantity: 1
Manufacturer: Interocean Systems Inc.
Drive: Electric motor
Line Speed: Variable (rheostatic control)
Maximum Drum Capacity: 4,650 m of 9.5 mm conducting cable
Recommended Work Load: 2,200 kg

A- and J-Frames
A-Frame
Type: Movable (hydraulic)
Quantity: 1
Location: Stern
Clearance over side: 10 ft
Useable width: 17 ft
Vertical clearance (deck to pad eye): 12 ft when deployed, 16 ft when forward
Safe working load: 12,000 lbs

J-Frame
Type: Movable (hydraulic)
Quantity: 1
Location: 01 Deck – stbd side

Clearance over side: 5 ft
Safe working load: 3,500 lbs

Ground Tackle
Bower Anchors
Quantity: 2
Type: Baldt stockless
Weight: 3,500 lbs each
Anchor Chains
Quantity: 2
Length:
Port - 8 shots = 720 ft
Starboard - 7 shots = 630 ft

Small Boats

10 m Rigid Hulled Inflatable Boat (RHIB) (HI-1)
Manufacturer: Ambar Marine
Engine: Yanmar 370 hp diesel (jet inboard)
Fuel storage capacity aboard: 100 gal
Personnel capacity: 10 people
Note: 24 dive tank capacity, carries 2 Quantum GX 2360S VHF, DSC Radiotelephone, Raymarine GPS RN 300, Ritchie magnetic compass, and Raymarine depth sounder
Weight: 7600 lbs

8 m RHIB (HI-2)
Manufacturer: Ambar Marine
Engine: Yanmar 315 hp diesel (jet inboard)
Fuel storage capacity aboard: 100 gal
Personnel capacity: 8 people
Note: 12 dive tank capacity, carries 2 Quantum GX 2360S VHF, DSC Radiotelephone, Raymarine GPS RN 300, Ritchie magnetic compass, and Raymarine depth sounder
Weight: 6200 lbs

6 m Rescue Boat, RHIB (HI-4)
Manufacturer: Ambar Marine
Engine: Honda 115 hp gasoline (outboard)
Gasoline storage capacity aboard: 25 gal
Personnel capacity: 6 people
Weight: 3500 lbs

17ft Aluminum Hull Foam Collar (HI-3)
Manufacturer: Northwind
Engine: Honda 90hp gasoline outboard
Gasoline capacity aboard: 25 gal
Personnel capacity: 6 people

Note: 6 dive tank capacity, carries iCom VHF, GPS, depth sounder, and magnetic compass
Weight: 2200 lbs

17.5 ft Inflatable Avon
Engine: Honda 50 hp gasoline (hand tiller outboard)
Gasoline storage capacity onboard: 5 gal
Personnel capacity: 800 lbs
Weight: 600 lbs
Note: carries Garmin GPS unit

Hi'ialakai also has the capacity to carry two additional program-provided 19ft Safeboats
Engine: two 90 hp gasoline outboard
Gasoline storage capacity: 60 gal
Personnel capacity: 7 people
Weight: 3600 lbs

Engineering Equipment

General
Cruising Speed: 10.5 knots
Range: 8,000 nmi
Power: 1,600 hp
Fuel Capacity: 223,000 gallons
Fuel Consumption: 114 gal/hr
Fuel Type: #2 Diesel

Propulsion Plant
Main Propulsion
Type: Diesel Electric 750 VDC
Quantity: 2
Manufacturer: General Electric
Rated power (each): 800 hp
Engines
Type: 398B Series Engines with KATO 600 VAC/ 600 kW Generators
Manufacturer: Caterpillar
Quantity: 4

Electrical System
Ship Service Generator
Quantity: 4
Manufacturer: Caterpillar/Kato
Power Rating: 600 kW

Emergency Generator

Quantity: 1
Manufacturer: Caterpillar/Kato
Power rating: 250 kW

Propellers
Type: Fixed Pitch
Quantity: 2
Diameter: 8 ft
Blades: 4 manganese bronze
Bow Thruster
Type: Tunnel Thruster
Quantity: 1
Manufacturer: General Electric/Harbor Master
Rated power: 550 hp
Pitch: fixed
Blades: 4

Freshwater Systems
Storage capacity:
Main - 4,063 gal
Reserve - 1,035 gal
Normal consumption: 2,000 gal/day with scientists aboard
Desalinator
Quantity: 2
Type: Evaporator
Manufacturer: Alfa Laval
Maximum production: 2,500 gal/day (each)
Type: Reverse Osmosis System
Manufacturer: Life Stream
Maximum production: 1,400 gal/day

Pollution Control
Sewage Waste Control
Type: Type II Sewage Treatment System
Manufacturer: Omnipure MSD 12 MC
Processing Capacity: 3,000 gal/day
Type: Collection, Holding & Transfer
Manufacturer: Omnipure
Holding Capacity: 6,000 gal

Oily Waste Control
Type: Oily Water Separator
Manufacturer: World Water System
Holding Capacity: 25 gal
Process Rate: 2 gal/min
Capability: discharges less than 100 ppm oil

Communications
GMDSS compliant
2 Furuno VHF Radiotelephone FM-8500
1 Furuno SSB Transceiver FS-1562-15
1 Furuno DSC/Watch Receiver DCS-60
1 Furuno Inmarsat B Radio Transceiver
Voice (011-872-336-996-010)
Fax (011-872-336-996-011)
Data (011-872-336-996-012)
Telex (011-872-336-996-013)
HSD (011-872-336-996-015)
1 Furuno Inmarsat Standard C
1 Nera Fleet 77 Satellite Communications
1 Furuno Navtex Receiver (519 kHz) NX-500
1 Ship's Cellular Telephone (808-721-9957)
1 Iridium Telephone (011-881-676-333-235 or 808-684-3235)
2 Class I Global Fix 906 MHz Emergency Position Indicator Radio Beacons
2 Search and Rescue Transponders (X-Band)
3 VHF Survival Craft Transceivers
Several VHF handheld radios for working frequencies
Email Address: Noaa.Ship.Hiialakai@noaa.gov

Navigation Equipment
1 Sperry MK227 Gyrocompass
1 Furuno Universal AIS FA-100
3 Furuno GPS Navigator GP-90 consoles
Nobeltec Admiral (electronic chart program)
Traditional paper charts
2 Furuno ARPA radar consoles with 28" color display
1 X-Band RADAR w/ chart overlay and integrated AIS
1 S-Band RADAR w/ chart overlay
1 Furuno Weather Facsimile DFAX Fax-207
Abyss IES-10 Echo Sounder (12 kHz and 200 kHz)
Kongsberg Simrad ES-60 Echo Sounder (12 kHz)

Scientific Equipment
2 Dell PowerEdge 2650s running Windows 2003 Server and SCS software
Wet Lab Freezer (TAFCO -- volume 215 cu ft, capacity -35 °F)
Kongsberg Simrad EM-300 Mid-Water Multibeam
Kongsberg Simrad EM-3002D Shallow Water Multibeam
Applanix TSS Positioning and Orientation System for Marine Vessels (POS/MV)
CSI Wireless MBX-3S DGPS Receiver
Kongsberg Simrad EK-60 Echo Sounder (38 kHz, 120 kHz and 200 kHz) (future capability)
AGI EM2000 Doppler Speedlog

RD Instruments Acoustic Doppler Current Profiler (75 kHz)
2 Belfort Windbirds and Bendix Friez 135 Aerovane Indicator
RM Young digital barometer (output in mb, recorded on SCS)
RM Young Temp/RH Sensor/RM Young Windbird – all recorded on SCS
CTDs:
1 Seabird Electronics Model SBE-9/11 Plus CTD system with SBE-32 12 position carousel water sampler: the SBE 9 Plus profiler underwater assembly has a depth capacity of 6,800 meters and a conductivity/temperature sensor pair.
1 Seabird Electronics Model SBE-19 Plus SEACAT profiler underwater assembly with a depth capacity of 500 meters.
Thermosalinograph (TSG): The Seabird Electronics SBE-45 Micro Thermosalinograph is plumbed into the ship's wet lab and measures the conductivity and temperature of the water. The hull intake is 3 meters below the water line. The Seabird SBE-21 is plumbed the same as the SBE-45. Both derive data from the remote SBE-38 Temperature Sensor probe mounted in the bow thruster space.